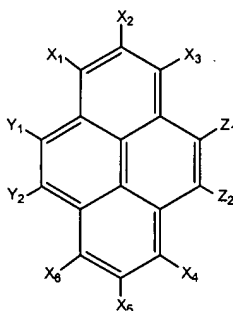


IN THE CLAIMS:

Please amend the claims as shown below.

1. (Cancelled).
2. (Currently Amended) A pyrene based compound according to the following formula:



wherein Z₁ represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, substituted or unsubstituted aryl group, substituted or unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and Z₂ represents a hydrogen or deuterium atom;

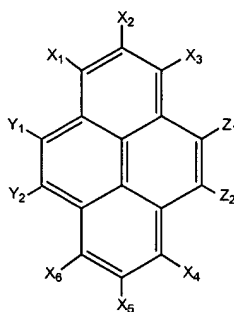
wherein one of Y₁ and Y₂ represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, a substituted or unsubstituted aryl group, substituted or unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and the other of Y₁ and Y₂ represents a hydrogen or deuterium atom;

wherein X₁ through X₆ independently represent hydrogen atoms, deuterium atoms, alkyl groups or aryl groups, and at least one of X₁ through X₆ represents a tert-butyl group;

wherein at least one of X₁ through X₆, Y₁, Y₂, Z₁, and Z₂ represents a deuterium atom; and

~~The compound of Claim 1,~~ wherein Z₁[[,]] and one of Y₁ and Y₂ independently represent a hole injection chromophore, an electron injection chromophore, or both.

3. (Currently Amended) A pyrene based compound according to the following formula:



wherein Z₁ represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, substituted or unsubstituted aryl group, substituted or unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and Z₂ represents a hydrogen or deuterium atom;

wherein one of Y₁ and Y₂ represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, a substituted or unsubstituted aryl group,

substituted or unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and the other of Y₁ and Y₂ represents a hydrogen or deuterium atom;

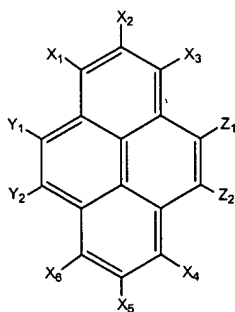
wherein X₁ through X₆ independently represent hydrogen atoms, deuterium atoms, alkyl groups or aryl groups, and at least one of X₁ through X₆ represents a tert-butyl group;

wherein at least one of X₁ through X₆, Y₁, Y₂, Z₁, and Z₂ represents a deuterium atom; and

~~The compound of Claim 1,~~ wherein Z₁[[,]] and one of Y₁ and Y₂
independently represent a cross-linking group.

4. (Currently Amended) The compound of Claim 3, wherein the cross-linking group comprises a di-vinyl group.

5. (Currently Amended) A pyrene based compound according to the following formula:



wherein Z₁ represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, substituted or unsubstituted aryl group, substituted or

unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and Z₂ represents a hydrogen or deuterium atom;

wherein one of Y₁ and Y₂ represents a substituted aryl group, and the other of Y₁ and Y₂ represents a hydrogen or deuterium atom;

wherein X₁ through X₆ independently represent hydrogen atoms, deuterium atoms, alkyl groups or aryl groups, and at least one of X₁ through X₆ represents a tert-butyl group;

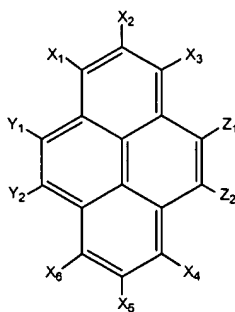
wherein at least one of X₁ through X₆, Y₁, Y₂, Z₁, and Z₂ represents a deuterium atom; and

~~The compound of Claim 1~~, wherein Z₁[[,]] and one of Y₁ and Y₂ independently represent a benzene ring substituted with one or two pyrenyl groups.

6. (Cancelled).

7. (Cancelled).

8. (Currently Amended) A pyrene based compound according to the following formula:

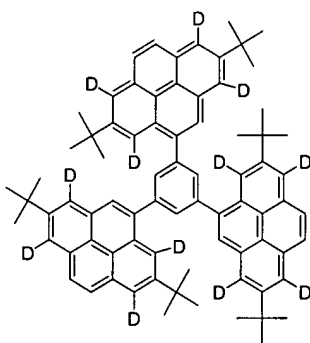


wherein Z_1 and Z_2 independently represent hydrogen atoms;

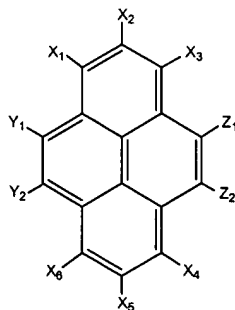
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

The compound of Claim 1, wherein the compound has the following structure:

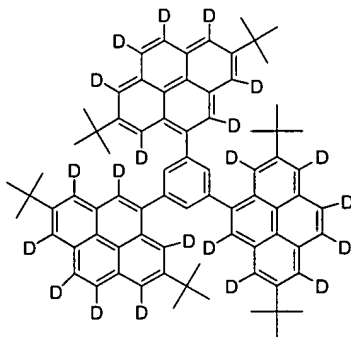


9. (Currently Amended) A pyrene based compound according to the following formula:

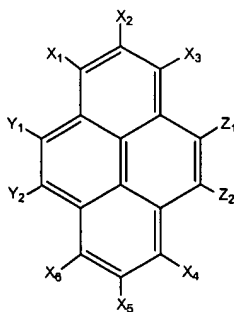


wherein Z_1 and Z_2 independently represent deuterium atoms;
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other
of Y_1 and Y_2 represents a deuterium atom;
wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2
and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1,~~ wherein the compound has the following
structure:



10. (Currently Amended)) A pyrene based compound according to
the following formula:

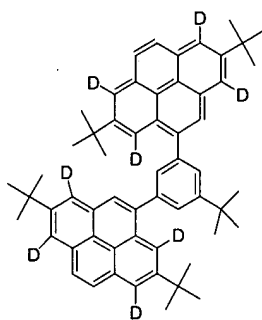


wherein Z_1 and Z_2 independently represent hydrogen atoms;

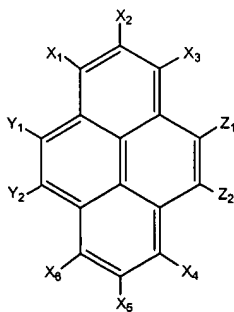
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1,~~ wherein the compound has the following structure:



11. (Currently Amended)) A pyrene based compound according to the following formula:

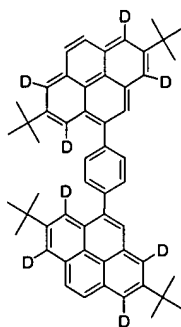


wherein Z_1 and Z_2 independently represent hydrogen atoms;

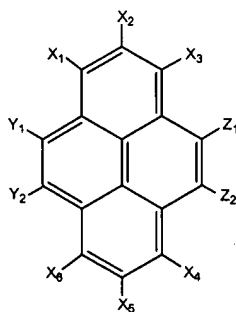
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1,~~ wherein the compound has the following structure:



12. (Currently Amended)) A pyrene based compound according to the following formula:

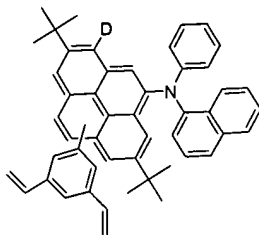


wherein Z_1 represents a substituted aryl amine group, and Z_2 represents a hydrogen atom;

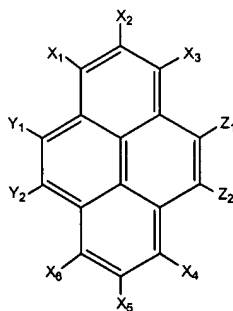
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 and X_6 independently represent hydrogen atoms, X_2 and X_5 independently represent tert-butyl groups and X_4 represents a deuterium atom; and

~~The compound of Claim 1,~~ wherein the compound has the following structure.



13. (Currently Amended)) A pyrene based compound according to the following formula:

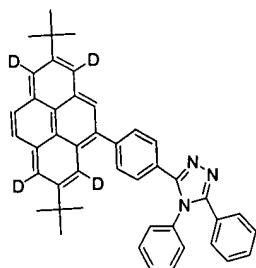


wherein Z_1 and Z_2 independently represent hydrogen atoms;

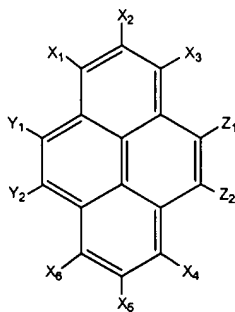
wherein one of Y_1 and Y_2 represents a substituted aryl group and substituted heteroaryl group combination, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1,~~ wherein the compound has the following structure:



14. (Currently Amended)) A pyrene based compound according to the following formula:

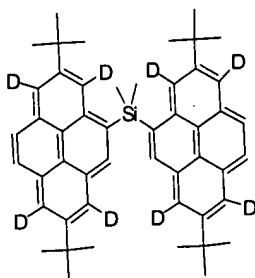


wherein Z_1 and Z_2 independently represent hydrogen atoms;

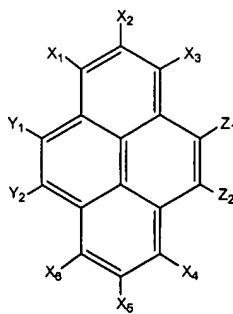
wherein one of Y_1 and Y_2 represents a silicon atom and substituted aryl group combination, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1,~~ wherein the compound has the following structure:



15. (Currently Amended)) A pyrene based compound according to the following formula:

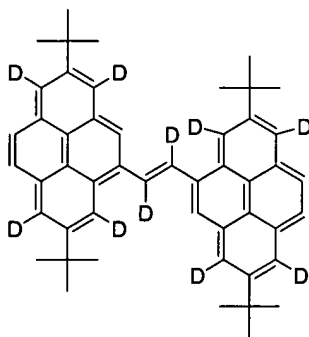


wherein Z_1 and Z_2 independently represent hydrogen atoms;

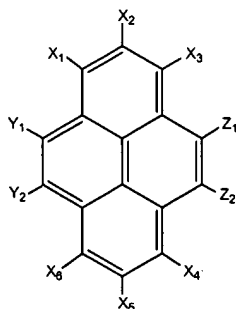
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1, X_3, X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1,~~ wherein the compound has the following structure:



16. (Currently Amended)) A pyrene based compound according to the following formula:

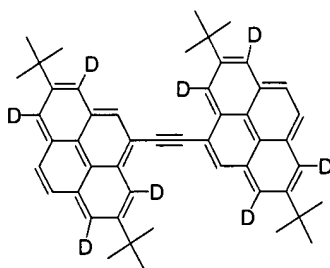


wherein Z_1 and Z_2 independently represent hydrogen atoms;

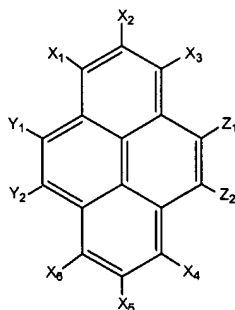
wherein one of Y_1 and Y_2 represents a substituted aryl group, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

The compound of Claim 1, wherein the compound has the following structure:



17. (Currently Amended)) A pyrene based compound according to the following formula:

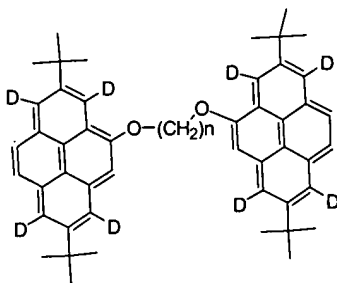


wherein Z_1 and Z_2 independently represent hydrogen atoms;

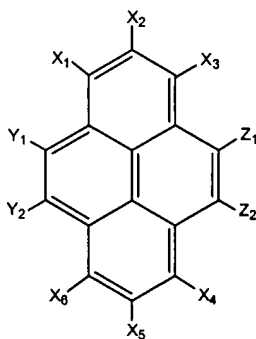
wherein one of Y_1 and Y_2 represents an oxygen atom and substituted aryl group combination, and the other of Y_1 and Y_2 represents a hydrogen atom;

wherein X_1 , X_3 , X_4 and X_6 independently represent deuterium atoms, and X_2 and X_5 independently represent tert-butyl groups; and

~~The compound of Claim 1;~~ wherein the compound has the following structure:



18. (Currently Amended) An organic light emitting device comprising an anode, a cathode and at least one organic layer sandwiched between the anode and the cathode, wherein the organic layer comprises a pyrene based compound of the following general formula:



wherein Z_1 represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, substituted or unsubstituted aryl group, substituted or unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and Z_2 represents a hydrogen or deuterium atom;

wherein one of Y_1 and Y_2 represents a hydrogen atom, deuterium atom, oxygen atom, silicon atom, selenium atom, a substituted or unsubstituted aryl group, substituted or unsubstituted heteroaryl group, substituted or unsubstituted aryl amine or a combination thereof, and the other of Y_1 and Y_2 represents a hydrogen or deuterium atom;

wherein X_1 through X_6 independently represent hydrogen atoms, deuterium atoms, alkyl groups or aryl groups, and at least one of X_1 through X_6 represents a ~~bulky alkyl group or bulky aryl~~ tert-butyl group; and

wherein at least one of X_1 through X_6 , Y_1 , Y_2 , Z_1 , and Z_2 represents a deuterium atom.

19. (Original) The organic light emitting device of Claim 18, wherein the organic layer is an emissive layer, a hole transport layer, an electron transport layer or combinations thereof.

20. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound serves as a host material of said organic layer.

21. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound serves as a dopant of said organic layer.

22. (Currently Amended) The organic light emitting device of Claim 18, wherein Z_1 [[,]] and one of Y_1 and Y_2 independently represent a hole injection chromophore, an electron injection chromophore, or both.

23. (Currently Amended) The organic light emitting device of Claim 18, wherein $Z_1[[,]]$ and one of Y_1 and Y_2 independently represent a cross-linking group.

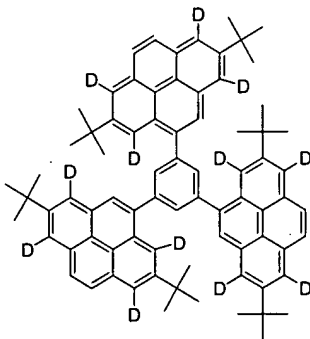
24. (Original) The organic light emitting device of Claim 23, wherein the cross-linking group comprises a di-vinyl group.

25. (Currently Amended) The organic light emitting device of Claim 18, wherein $Z_1[[,]]$ and one of Y_1 and Y_2 independently represent a benzene ring substituted with one or two pyrenyl groups.

26. (Cancelled).

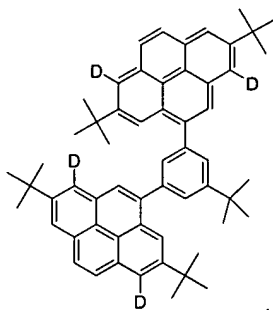
27. (Cancelled).

28. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:

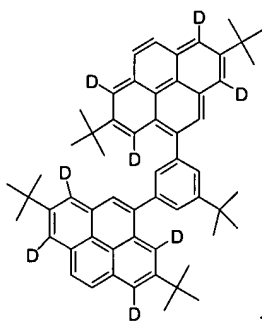


29. (Original) The organic light emitting device of Claim 18, wherein the compound has the following structure:

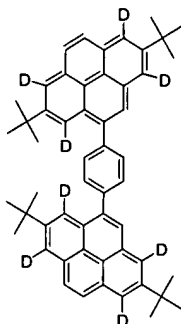
30. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



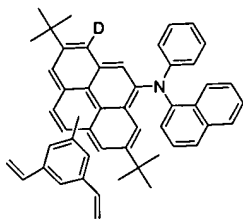
31. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



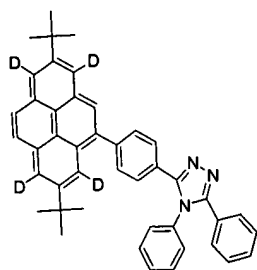
32. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



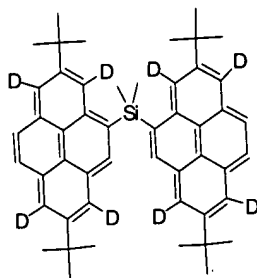
33. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



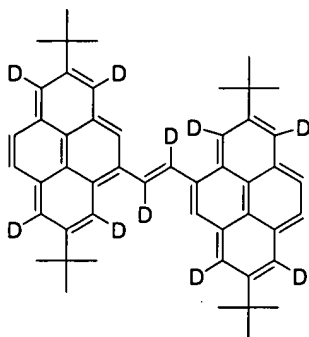
34. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



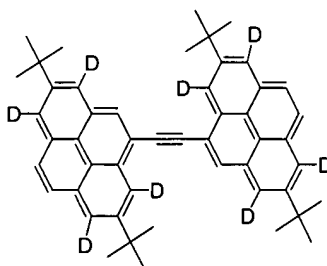
35. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



36. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



37. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:



38. (Original) The organic light emitting device of Claim 18, wherein the pyrene based compound has the following structure:

